

MATERIALS TOWARD A MONOGRAPH OF THE GENUS CITHAREXYLUM. VII

Harold N. Moldenke

CITHAREXYLUM STEYERMARKII Moldenke

Midrib very prominent beneath; secondaries slender, 7 or 8 per side, arcuate-ascending, flat or subprominulous above, very sharply prominent beneath, joined in many loops near or at the margins beneath; veinlet reticulation very abundant, conspicuously prominulous above, sharply prominulous beneath; inflorescence terminal, racemiform; racemes simple or the large ones branched at the base, 6--15 cm. long, densely many-flowered; peduncles and rachis slender, minutely puberulent, the former 2--2.5 cm. long; pedicels very slender, 1--2 mm. long, puberulent, in fruit to 3 mm. long and glabrescent; calyx campanulate, about 3 mm. long and wide, light, very shiny, glabrous, the rim truncate and entire, short-ciliolate; corolla hypocrateriform, sweet-scented, its tube 5 mm. long, the lobes spreading, slightly squarrose, densely pubescent on the inner face; fruiting-calyx slightly indurated, cupuliform, about 3 mm. long and 5 mm. wide, light-colored, glabrous, very shiny, its rim truncate and entire; immature fruit subglobose, greenish, tinged with dull-orange, about 5 mm. long and wide, glabrous.

The type of this species was collected by Julian Alfred Steyermark (no. 31433) -- in whose honor it is named -- on shaded cloud-forest slopes on top of Volcán Quezaltepeque, 3--4 miles northeast of Quezaltepeque, at an altitude of 1500--2000 meters, Chiquimula, Guatemala, on November 8, 1939, and is deposited in the herbarium of the Chicago Natural History Museum. The type sheet is in fruit and has its leaves subcoriaceous, 4.5--11.5 cm. long and 1.8--4.2 cm. wide. An isotype, also at Chicago, is in flower and has its leaves larger and thinner, merely chartaceous in texture, to 18 cm. long and 7.8 cm. wide. In all, 4 herbarium specimens, including the type, and 4 mounted photographs have been examined.

Citations: GUATEMALA: Chiquimula: Steyermark 31432 (F--1039540), 31433 (F--1041184--isotype, F--1041191--type, N--isotype, N--photo of type, N--photo of isotype, Z--photo of type, Z--photo of isotype).

CITHAREXYLUM SUBEROSUM Loes. ex Moldenke, Geogr. Distrib. Avicenn. 23, nom. nud. 1939; sp. nov.

Frutex vel arbor; ramis acute tetragonis crassis suberosis; ramulis brunneis acute tetragonis saepe marginatis glabris; foliis oppositis; petiolis percrassis plerumque marginatis; laminis coriaceis ellipticis acutis vel breviter acuminatis parce serratis vel subintegris, ad basin subcuneatis, saepe glanduliferis, utrinque glabris; inflorescentiis axillaribus terminalibusque rectis vel nutantibus simplicibus densiuscule multifloris glabris.

Literature: Moldenke, Geogr. Distrib. Avicenn. 23. 1939; Mol-

denke, *Known Geogr. Distrib. Verbenac.*, [ed. 1], 34 & 88 (1942) and [ed. 2], 72 & 180. 1949; Moldenke, *Alph. List Cit.* 4: 1067 & 1113. 1949; Moldenke, *Résumé* 82 & 447. 1959.

Shrub or tree; branches stout and heavy, acutely tetragonal, corky, grayish; branchlets and twigs stout or slender, brown, acutely tetragonal, often margined, glabrous, often shiny; nodes annulate; principal internodes 1--6 cm. long; leaf-scars borne on tremendous, stout, corky, divergent sterigmata to 7 mm. long and 5 mm. wide; leaves decussate-opposite, often with 2 branchlets or twigs arising from one axil; petioles very stout, 3--12 mm. long, usually margined, glabrate; leaf-blades coriaceous, rather uniformly dark-green on both surfaces, the immature ones thinner and nigrescent in drying, elliptic, 4.2--13 cm. long, 1.7--7.5 cm. wide, acute or short-acuminate at the apex, sparsely serrate with very short teeth along the margins almost to the base or subentire, subcuneate at the base and prolonged into the petiole, often with a few scattered glands at or near the base beneath, glabrous on both surfaces; midrib stout, plane or subprominent above, very prominent beneath; secondaries slender, 4--10 pairs, usually quite irregular, arcuate-ascending, very slightly prominent or subimpressed above, prominent beneath; vein and veinlet reticulation abundant, prominent on both surfaces (uniformly so above, irregularly so beneath); racemes axillary and terminal, 7.5--20 cm. long, about 1.3 cm. wide during anthesis, erect or nutant, rather densely many-flowered, simple; peduncle and rachis slender, light-brown, more or less ribbed, glabrous, the former 1--1.5 cm. long; bracts and bractlets absent; prophylla setaceous, minute; pedicels slender, 1--2 mm. long, and glabrous, or obsolete; fruiting-calyx large, indurated, cupuliform, about 5.5 mm. long and 7 mm. wide, rather venose-ribbed, glabrous, its rim deeply but irregularly 5-lobed, the lobes acute or blunt at the apex; fruit drupaceous, oblong, about 7 mm. long and 6 mm. wide, somewhat fleshy, glabrous, shiny.

The type and only known collection of this species was made by August Weberbauer (no. 5916) somewhere in Apurimac, Peru, at an altitude of 3100 meters, between 1909 and 1914, and is deposited in the herbarium of the Chicago Natural History Museum. The species is said to grow in fields, blooming from April to June, and has been confused in herbaria with *C. reticulatum* H.B.K. In all, 5 herbarium specimens, including the type, and 4 mounted photographs have been examined.

Citations: PERU: Apurimac: Weberbauer 5916 (F--628976--type, G--isotype, N--isotype, N--photo of type, S--isotype, W--1495382--isotype, Z--photo of type).

CITHAREXYLUM SUBFLAVESCENS Blake, *Proc. Biol. Soc. Wash.* 35: 122--123. 1922.

Synonymy: *Citharexylum obtusum* Pittier ex Moldenke, *Prelim. Alph. List Invalid Names* 17, in syn. 1940. *Citharexylum robustum* Pittier ex Moldenke, *Prelim. Alph. List Invalid Names* 17, in syn. 1940. *Citharexylum tomentosum* Klotzsch & Karst. ex Moldenke, *Prelim. Alph. List Invalid Names* 18, in syn. 1940 [not *C.*

tomentosum Poir., 1811, nor H.B.K., 1817, nor Sessé & Moc., 1831].
Citharexylum subflabescens Blake, in herb.

Literature: Blake, Proc. Biol. Soc. Wash. 35: 122--123. 1922; Hill, Ind. Kew. Suppl. 7: 50. 1929; Moldenke, Geogr. Distrib. Avicenn. 19 & 20. 1939; Pittier, Supl. Pl. Usual. Venez. 54. 1939; Moldenke, Prelim. Alph. List Invalid Names 17 & 18. 1940; Moldenke, Alph. List Invalid Names 15. 1942; Moldenke, Known Geogr. Distrib. Verbenac., [ed. 1], 31, 32, & 88. 1942; Moldenke, Castanea 10: 43. 1945; Moldenke, Alph. List Cit. 1: 193, 222, & 273. 1946; Moldenke, Phytologia 2: 334. 1947; Moldenke, Alph. List Cit. 2: 332, 352, 420, 447, & 603 (1948), 3: 749, 805, 819, 826, 833, & 974 (1949), and 4: 1001, 1019, 1044, & 1077. 1949; Moldenke, Known Geogr. Distrib. Verbenac., [ed. 2], 59, 62, 158, & 180. 1949; A. L. & H. N. Moldenke, Anal. Inst. Biol. Mex. 20: 5. 1949; Moldenke, Résumé 66, 70, 215, 257, 258, & 447. 1959.

Low tree, to 30 m. tall; trunk short, to 60 cm. in diameter at the base or only 8 cm. in diameter at breast height; crown rounded; bark gray or pale-gray, smooth or flaky; branches, branchlets, and twigs very stout, acutely tetragonal, buff-gray or brown, densely or sparsely furfuraceous-tomentose with branch-
ed flavescent hairs or granulose-pulverulent, becoming griseous or sordid to glabrous and shiny in age, very medullose or hollow, often decussately ampliate and flattened at the nodes, the branchlets elliptic in cross-section; nodes not annulate; principal internodes elongated, 2.5--7 cm. long; pith white; leaf-scars borne on stout ascending sterigmata; leaves decussate-opposite or rarely approximate; petioles slender or stout, 2.7--6 cm. long, canaliculate beneath and often also above, usually flattened above or subtetragonal in cross-section, buff-gray when fresh, nigrescent in drying, pubescent like the branchlets or densely ochraceous-furfuraceous, often with myrmecophilous swellings at the apex; leaf-blades subcoriaceous or firmly thick-pergamentaceous, rather uniformly bright-green or dull olive-green above and buff-yellowish beneath, dull or subnitid above, ovate or oblong-ovate to ovoid-elliptic, 12--27 cm. long, 4--11.5 cm. wide, acute to attenuate or acuminate at the apex, entire but often somewhat sinuate and minutely revolute along the margins, rounded or subtruncate to broadly acute or cuneate at the base, apparently not glanduliferous, densely furfuraceous-pubescent with spreading olivaceous-yellowish branched hairs above when young, glabrescent and pale-green above except along the midrib and secondaries when mature, densely and persistently ochraceous-furfuraceous or pilose-tomentose with flavescent stellate hairs beneath; midrib stout, plane or impressed above, very prominent beneath; secondaries slender, 6--16 pairs, often rather close together, arcuate-ascending or the lower ones almost straight, obscure or impressed above, prominent beneath, confluent near the margins; vein and veinlet reticulation practically indiscernible above, prominulent or hidden by the pubescence beneath; inflorescence spicate; spikes axillary and terminal, solitary or often paired in the upper

axils, 9--30 cm. long, about 1.6 cm. wide, simple, erect or spreading to nutant, rather densely or loosely many-flowered; peduncles and rachis rather stout (in fruit often very stout), densely or sparsely ochraceous-furfuraceous, the former 0.7--2 cm. long; pedicels obsolete or to 1 mm. long in fruit; bracts none; bractlets few and linear or triangular, to 2.5 mm. long, tomentose-pubescent; prophylla setaceous, about 1 mm. long, densely furfuraceous; flowers sessile; calyx obovoid, 5--6 mm. long, densely pubescent like the branchlets, the teeth irregularly cohering in 2 or 3 groups, triangular, about 1 mm. long, obtuse or apiculate at the apex; corolla from white or whitish to dull olive-green, about 8 mm. long, externally essentially glabrous, densely barbate-pilose within from the level of the insertion of the stamens to the middle of the limb, the limb 5- or rarely 6-lobed, the lobes cuneate-flabellate, 2--2.5 mm. long, somewhat wavy-margined; perfect stamens 5 or rarely 6, inserted near the middle of the corolla-tube, included; filaments subulate, about 1.3 mm. long, glabrous; anthers linear-oblong, about 1.3 mm. long, obtuse at the apex; style bifid; ovary 4-celled; ovules solitary, erect; fruiting-calyx large, incrassate, indurated, cupuliform, about 8 mm. long and 9 mm. wide, rather venose-ribbed, minutely puberulent or glabrate, its rim 5-angulate; fruit drupaceous, obovate, about 1.5 cm. long and 1.1 cm. wide at its widest part, fleshy, shiny, glabrous, orange or red when fresh, wrinkled and 2-sulcate in drying.

The type of this species was collected by Frederick Wilson Popenoe (no. 1143) from trees cultivated on the streets of Bogotá, at an altitude of 2640 meters, Cundinamarca, Colombia, on October 11, 1920, and is deposited in the United States National Herbarium at Washington. The collector notes that the species is cultivated considerably as a street tree in Bogotá. Blake says "it is distinguished by its combination of long-petioled comparatively large leaves, densely flavescent-tomentose beneath, and its truly spicate pentandrous flowers. Only a few species with all the stamens perfect have been described, and from all of these *C. subflavescens* is clearly distinct."

The type of *C. robustum* was collected by Henri François Pittier (no. 9333) at Colonia Tovar, Aragua, Venezuela, on March 21, 1921, and is deposited in the Gray Herbarium at Harvard University.

In its wild state this species inhabits clearings, grass pastures, the margins of forests, and bushy rocky slopes, from 1800 to 2880 m. altitude. It has been collected in anthesis in May, September, October, and December, and in fruit in August. It has been confused by herbarium workers with *C. tomentosum* H.B.K. and with the genus *Cordia* L. of the Ehretiaceae.

Steyermark affirms that the tree is said to be poisonous to the skin and to cause dermal swellings and itching like those of poison-ivy (*Toxicodendron radicans*). Common names are "cuidadito" and "salvio". Bark specimens are preserved on the

sheets of Schultes, Jaramillo, & Gutiérrez 4054a. The Berlin sheets of Karsten s.n., cited below, are inscribed "Columbien", but Colonia Tovar, where they were collected, is definitely in what is now Aragua, Venezuela. Most of the Venezuelan material has come from this locality.

The species is closely related to C. montanum Moldenke, and the Pennell 2545 cited below may possibly be that species rather than C. subflavescens. Bernardi says "Madera resistente a la intemperie" and "especie aparentemente restringida a la region." In all, 56 herbarium specimens, including the types of all the names involved, and 10 mounted photographs have been examined.

Citations: COLOMBIA: Boyacá: Toro 27 (N). Cundinamarca: García y Barriga 13476 (W--2026285); F. W. Pennell 2545 (N); Schultes, Jaramillo Mejía, & Gutiérrez Villegas 4054a (W--1988710, W--1988711). Huila: E. L. Little 9029 (N). Valle del Cauca: Cuatrecasas 22407 (N). Department undetermined: Purdie s.n. [R. Courou] (K). VENEZUELA: Aragua: Fendler 1023 (Cb, Cb, Cb, Cb, D--611381, D--611882, E--119108, E--119109, E--119110, F--686706, G, G, G, K, K, N, N); Karsten s.n. [Colonia Tovar] (B, B, L, L, L, N, V--124270, V, V); Moritz 1777 (Bm, G, K, Ol, Ol, P, V); Pittier 9333 (B--photo, Cb, G, K--photo, N, N--photo, S--photo, Ve, Ve, W--42955, Z--photo). Mérida: Bernardi 2069 (N); Steyermark 56449 (F--1205144, N). CULTIVATED: Colombia: Gutiérrez Villegas s.n. [Julio 1947] (Fn--3121, Ms); García y Barriga 10501 (W--1830430); Popoece 1143 (B--photo of type, G--isotype, K--photo of type, N--photo of type, S--photo of type, W--1067081--type, Z--photo of type).

CITHAREXYLUM SUBTHYRSOIDEUM Pittier, Contrib. Fl. Venez. 42--43. 1923.

Synonymy: Citharexylum subthyrsoideum Meissn., in herb.

Literature: Pittier, Contrib. Fl. Venez. 42--43. 1923; Hill, Ind. Kew. Suppl. 7: 50. 1929; Moldenke, Geogr. Distrib. Avicenn. 19 & 20. 1939; Moldenke, Known Geogr. Distrib. Verbenac., [ed. 1], 31, 32, & 188. 1942; Moldenke, Alph. List Cit. 1: 198, 273, & 326 (1946), 2: 332, 411, 425, 427, & 631 (1948), 3: 818--820, 887, & 888 (1949), and 4: 1005, 1041, 1044, 1049, 1052, 1057, 1060, & 1064. 1949; Moldenke, Known Geogr. Distrib. Verbenac., [ed. 2], 59, 62, & 180. 1949; Moldenke, Résumé 66, 70, & 447. 1959.

Shrub or small tree, to 5 m. tall; branches, branchlets, and twigs slender, gray or brown, acutely tetragonal, often more or less ribbed, glabrous; nodes annulate; principal internodes 1--7 cm. long; leaves decussate-opposite or approximate; leaf-scars borne on short ascending sterigmata to 3 mm. long; petioles very slender, 0.6--2.5 cm. long, glabrous; leaf-blades chartaceous, uniformly dark-green on both surfaces, lanceolate-oblong or elliptic, often conduplicate-falcate,

3.5--11.5 cm. long, 1.5--4 cm. wide, acute or acuminate at the apex, entire, acute at the base, often bearing 1 or 2 small glands at the very base beneath, glabrous or subglabrate on both surfaces, often more or less punctate beneath; midrib slender, subimpressed above, prominent beneath; secondaries slender, 4--7 pairs, arcuate-ascending, very slightly prominent on both surfaces; vein and veinlet reticulation delicate, slightly prominent above or often rather obscure; racemes numerous, axillary and terminal, the terminal ones often compound and thyrsoid with 1 or 2 pairs of lateral branches, each simple raceme 3--12 cm. long, about 1 cm. wide during anthesis, densely many-flowered, mostly nutant; peduncles and rachis very slender, minutely puberulent or glabrous, the former 1--2 cm. long or subobsolete; pedicels very slender, 1--2 mm. long, minutely pulverulent or glabrous; bracts absent; bractlets few or none, linear or oblong; prophylla setaceous, 1--2 mm. long, often conspicuous; flowers caducous; calyx campanulate, about 2.5 mm. long, persistent, 5-costate, glabrous or subglabrate externally, very minutely sericeous at the top inside, its rim 5-dentate, the margins ciliate; corolla white or greenish-white to yellow, its tube conic, about 4 mm. long, almost twice as long as the calyx, villosulous on the inner surface, densely villous in the throat, the lobes spreading, broadly ovate, about 2 mm. long and 1.5 mm. wide, rounded at the apex, glabrous externally, softly villous within; stamens 4, glabrous; filaments short, inserted at the middle of the corolla-tube; pistil about 3.5 mm. long, longer than the calyx, glabrous; style erect, about 1.5 mm. long; stigma about 0.3 mm. long, shortly 2-lobulate; ovary globose, about 1.7 mm. long; fruiting-calyx light and herbaceous, cupuliform, fragile, about 3 mm. long and 6 mm. wide, externally minutely pulverulent or puberulent, minutely pulverulent within, its rim subtruncate or shallowly 5-angulate; fruit drupaceous, oblong or ovoid, about 6 mm. long and 5 mm. wide, fleshy, glabrous, shiny, black and wrinkled in drying, 2-sulcate.

The type of the species was collected by Henri François Pittier (no. 7234) in light woods, altitude 1000 to 1200 meters, in the Lower Catuche woods above Caracas, Federal District, Venezuela, on July 8, 1917, and is deposited in the United States National Herbarium at Washington. It inhabits light woods, ravines, savannas, and bushy places in the hills. It has been collected in anthesis from May to September, and in fruit in August. The flowers are described as "deciduous" by Pittier. They apparently fall off very easily, as, indeed, they do in many members of this group, and seed-setting is therefore not abundant. Often only the terminal part of a fruiting raceme bears any fruit, although sometimes one finds fruit set to the base. The numerous small leaves and racemes, and tiny flowers, characterize this very constant species quite well. In the original description no type is designated and two numbers are cited -- no. 7234 as the basis of the floral characters and no. 9648 for the fruit characters. However, the original notes on

the Washington sheets indicate plainly that the former collection was Pittier's intended type. In all, 53 herbarium specimens, including the type, and 5 mounted photographs have been examined.

Citations: COLOMBIA: State undetermined: Triana 299 (Bm). VENEZUELA: Aragua: Fendler 842 (G, G, K). Federal District: H. M. Curran 269 (N); Eggers 13131 (Cp, F--689299, G, Le, W--1234565, W--1323226); Herb. Lugd.-Bat. 908266-140 (Le); Lasser 742 (Ve--12649); Pittier 7234 (B--photo of type, G--isotype, K--photo of type, N--photo of type, S--photo of type, Ve--12652--isotype, W-987359--type, Z--photo of type), 9645 (N), 9648 (Ba, Cb, G, P, Ve--12654, Vi, W--1069489), 12414 (A, B, Cb, Cb, D--636519, E--942330, Mu, N, N, Ve--12655, W--1344426), 13380 (A, Ca--735002, Cb, D--651400, E--983629, F--637368, Mu, N, Ve--12653, W--1472510); Van Landsberge 227 (Le, Le, Le, S). Lara: Saer 33 (Ve, W--1186273), 664 (Ve); Tamayo 3757 (N). State undetermined: González s.n. (Ve).

CITHAREXYLUM SUBTRUNCATUM Moldenke in Fedde, Repert. 37: 234--235. 1934.

Literature: Moldenke in Fedde, Repert. 37: 234--235. 1934; Hill, Ind. Kew. Suppl. 9: 67. 1938; Moldenke, Geogr. Distrib. Avicenn. 26. 1939; Moldenke, Known Geogr. Distrib. Verbenac., [ed. 1], 36 & 88. 1942; Moldenke, Alph. List Cit. 1: 322. 1946; Moldenke, Known Geogr. Distrib. Verbenac., [ed. 2], 76 & 180. 1949; Moldenke, Résumé 88 & 447. 1959.

Tree, to 5 m. tall; branchlets and twigs stout, medullose or hollow, light-brown, obtusely tetragonal or 5-angled, triangular at the nodes, glabrate, sparingly lenticellate; nodes annulate, the annulations Ω -shaped, conspicuous; principal internodes elongate, 6--9 cm. long; leaf-scars borne on short, stout, ascending sterigmata; leaves ternate; petioles very stout, wrinkled in drying, 2.3--3.7 cm. long, flattened or sulcate above, ampliate at the base, weak, glabrous; leaf-blades firmly chartaceous or subcoriaceous, uniformly dark-green on both surfaces, broadly oblong, 11.5--16.5 cm. long, 6.2--8.3 cm. wide, acute at the apex, entire, subtruncate at the base but slightly prolonged into the petiole, bearing a pair of very large and prominent, black, crateriform glands on the prolongation, glabrous and rather shiny above, minutely pulverulent beneath; midrib stout, sharply prominent above, very prominent beneath; secondaries slender, 7--10 pairs, arcuate-ascending, rather regular, prominent on both surfaces; vein and veinlet reticulation abundant, prominent on both surfaces; racemes axillary, ternate, 10.5--17.5 cm. long, about 3 cm. wide in fruit, simple, erect or nutant, rather loosely many-flowered; peduncles and rachis slender, brown, very minutely puberulent, the former 2.2--4 cm. long; pedicels (in fruit) stout, 2--2.5 mm. long, minutely puberulent; bracts and bractlets apparently absent; prophylla minute, setaceous, inconspicuous; flowers not known; fruiting-calyx indurated, cupuliform, about 5 mm. long and 6 mm. wide, heavy, more or less rug-

ate, glabrate, its rim subtruncate, irregularly erose; fruit drupaceous, oblong or obovoid, about 13 mm. long and 8 mm. wide, rather slightly fleshy, glabrous and rather shiny, orange or yellow when fresh, brown and plainly 2-sulcate in drying.

The type of this species was collected by Bror Eric Dahlgren and Emil Sella (no. 685) at Belém, Pará, Brazil, between March and May, 1929, and is deposited in the herbarium of the Chicago Natural History Museum. It is plainly related to C. myrianthum Cham., C. laetum Hiern, and C. amazonicum Moldenke. It is said to be found on campos, fruiting in April, and is called "comida de pombo". In all, 5 herbarium specimens, including the type, and 5 mounted photographs have been examined.

Citations: BRAZIL: Amapá: Lobato & Lobato s.n. [Black 50-9543] (Be--55606). Pará: Black, Ledoux, & Stegemann 52-14337 (Be--74066); Dahlgren & Sella 685 (B--photo of type, F--602585--type, K--photo of type, N--isotype, N--photo of type, S--photo of type, Z--photo of type), 769 (F--603009).

CITHAREXYLUM SULCATUM Moldenke in Fedde, Repert. 37: 235--236. 1934.

Literature: Moldenke in Fedde, Repert. 37: 235--236. 1934; Hill, Ind. Kew. Suppl. 9: 67. 1938; Moldenke, Geogr. Distrib. Avicenn. 19. 1939; Moldenke, Known Geogr. Distrib. Verbenac., [ed. 1], 31 & 88. 1942; Moldenke, Alph. List Cit. 1: 12, 132, 243, & 249. 1946; Daniel, Verb. Cent. Antioq. 5. 1947; Moldenke, Alph. List Cit. 2: 337 (1948), 3: 692, 694, 758, 805, 809, & 833 (1949), and 4: 1005, 1010, 1040, 1042, 1069, & 1075. 1949; Moldenke, Known Geogr. Distrib. Verbenac., [ed. 2], 59 & 180. 1949; Acosta Solis, Publ. Dept. Forest. Ecuador 7: 25. 1949; Moldenke, Résumé 66 & 447. 1959.

Small gnarled shrub, to 6 m. tall; trunk to 7 cm. in diameter at breast height; bark gray, slightly fissured; branchlets and twigs medium, stiff, gray or light-brown, acutely or obtusely tetragonal, lepticellate, puberulent on the younger parts, becoming glabrous and shiny, sometimes more or less furfuraceous-barbellate at or near the nodes or on the angles; nodes annulate; principal internodes 1--6.5 cm. long; leaf-scars borne on large, often massive, divergent, corky sterigmata to 7 mm. long and 4 mm. wide; leaves decussate-opposite; petioles stout, 4--15 mm. long, more or less furfuraceous-pubescent or puberulent, becoming glabrous and shiny, sulcate above; leaf-blades coriaceous, rather uniformly dark-green on both surfaces or lighter beneath, very shiny above, the immature ones becoming brunnescens or nigrescent above in drying, elliptic-oblong or elliptic, 3.3--18.8 cm. long, 1.5--3.3 cm. wide, broadly acute at the apex, very sharply serrate along the margins with very small, very stiff, and sharply apiculate, rather widely separated, antrorse teeth almost to the base, or rarely subentire, broadly rounded or acute to subcuneate at the base, often more or less prolonged into the petiole and bearing a pair of obscure glands on the

prolongation beneath, glabrous above or puberulent along the midrib when immature, more or less furfuraceous-pubescent along the midrib and secondaries beneath when immature, soon becoming glabrous; midrib stoutish or slender, sharply prominulent within a channel above, very prominent beneath; secondaries slender, 5--8 pairs, impressed above or sharply prominulent in a channel, sharply prominent beneath, ascending at an angle of 45--75°, usually not much arcuate, plainly anastomosing; vein and veinlet reticulation beautifully prominulent on both surfaces when mature or subimpressed above; racemes axillary and terminal, erect or nutant, 4.5--25 cm. long, to 2.4 cm. wide during anthesis, loosely or rather densely many-flowered, simple; peduncles and rachis slender or stout, very stout in fruit, brown, densely furfuraceous or minutely puberulent to glabrous, the former 5--10 mm. long; pedicels slender, 1--2 mm. long; bracts and bractlets absent; prophylla minute, linear-setaceous, to 1 mm. long; calyx campanulate, about 4.1 mm. long and 3.9 mm. wide, glabrate, conspicuously 5-costate, its rim very shortly 5-apiculate; corolla infundibular, greenish-white or yellowish to light-green, its tube broadly cylindric, about 5.7 mm. long, about 1.5 mm. wide at the base and to 5 mm. wide at the apex, externally glabrous, densely pilose in the throat within, the limb 5-parted, the lobes subequal, rounded-lingulate, about 2.6 mm. long and 3.1 mm. wide, rounded at the apex; stamens 4, didynamous, inserted about 3.1 mm. below the mouth of the corolla-tube, included; filaments about 1 mm. long; anthers oblong, about 2 mm. long and 0.8 mm. wide, dorsifixed; pistil included; style thick, about 1.5 mm. long, pulverulent, broadened and merging into the ovary at the base; stigma minutely bilobed, the lobes about 0.5 mm. long, densely fimbriate; ovary obovate, about 1.3 mm. long, about 1.8 mm. wide at the apex, 4-celled; fruiting-calyx greatly indurated and incrassate, cupuliform, about 6 mm. long and 10 mm. wide, 5-ribbed, densely furfuraceous or glabrous and shiny, its rim more or less irregularly 5-lobed or -split; fruit drupaceous, oblong or obovate, about 14 mm. long and 10 mm. wide, somewhat fleshy, glabrous, shiny, black and wrinkled in drying and 2-sulcate.

The type of this species was collected by Francis Whittier Pennell (no. 2029) on a bushy mountain-slope, at an altitude of 2900--3000 meters, at Chapinero, near Bogotá, Cundinamarca, Colombia, between September 18 and 23, 1917, and is deposited in the Britton Herbarium at the New York Botanical Garden. The leaves are quite holly-like. The specific name is given in allusion to the fact that the leaf-blades are so often decidedly sulcate above, with the midrib, secondaries, and larger venation impressed in distinct channels. Sometimes, however, the veins and veinlets are beautifully prominulent above. The entire venation is always sharply prominent or prominulent beneath.

The species inhabits bushy mountain-slopes, forests, and the area near the bottom of canyon-slopes, and has been collected

at altitudes of 2650--3300 meters, blooming in January, February, April, and October, and fruiting in June, July, and October. It is obviously very closely related to C. suberosum Loes., and has been confused by herbarium workers with C. ilicifolium H.B.K. It is said by Acosta Solis to be found in Chillanes, Bolívar, Ecuador, and there called "cogollo", but I have as yet seen no material from that country. Daniel says of it "En varios sitios, se conocen los arbustos catalogados bajo la denominación genérica de Citharexylum con el nombre de 'agracejos'".

Mutis 4373, cited below, is anomalous in its large leaves and racemes and in its much more copious furfuraceous pubescence throughout. Mostly the leaves of this species are only to 8 cm. long and 4 cm. wide, and the racemes to 15 cm. long. In all, 33 herbarium specimens, including the type, and 8 mounted photographs have been examined.

Citations: COLOMBIA: Antioquia: Ariste-Joseph A.263 (W--1038670). Boyacá: Pérez Arbeláez & Cuatrecasas 8175 (N). Cundinamarca: Ariste-Joseph A.117 (G, W--888323); Cuatrecasas 5469 (N, N), 7978 (W--1774232); Goudot 1 (P, X); Guatavito 1 (K); Haught 5638 (N, S); Little & Little 9201 (W--2140889); Mutis 861 (W--1561454), 900 (W--1561456), 2244 (W--1561463), 4177 (W--1561469), 4373 (W--1561455); F. W. Pennell 2029 (B--photo of type, K--photo of type, N--type, N--photo of type, S--photo of type, Z--photo of type), 2442 (G, N); Purdie s.n. [woods & hills near Bogotá] (G, K, K, K, P); Triana 2012 (Bm, V), 2042 (P), 2072 [Macbride photos 28398] (Cb, F--830270--photo, Kr--photo, N--photo); Troll 3674 (B, B). State undetermined: Triana 133 (K).

CITHAREXYLUM SVENSONII Moldenke, *Known Geogr. Distrib. Verbenac.*, [ed. 1], 76. 1942.

Literature: Moldenke, *Known Geogr. Distrib. Verbenac.*, [ed. 1], 33, 76, & 88 (1942) and [ed. 2], 69 & 180. 1949; Moldenke, *Alph. List Cit.* 4: 982. 1949; E. J. Salisb., *Ind. Kew. Suppl.* 11: 55. 1953; Moldenke, *Résumé* 79 & 447. 1959.

Shrub, to 3 m. tall; branches and branchlets acutely tetragonal, medullose, often longitudinally striate, glabrous, lenticellate; nodes annulate; principal internodes 2.5--7 cm. long; leaves decussate-opposite, borne on large, corky, appressed sterigmata; petioles slender, 12--15 mm. long, deeply canaliculate, glabrous; leaf-blades thin-chartaceous or submembranous, uniformly bright-green and shiny on both surfaces, not nigrescent in drying, elliptic, about 15 cm. long, 5.5--7 cm. wide, long-acuminate at the apex, entire, abruptly acute at the base, glabrous on both surfaces, very densely reticulate-veined, the venation prominulous on both surfaces, not glanduliferous; inflorescence terminal, paniculate, usually with about 2 pairs of branches near the base; peduncles slender, 5--6 cm. long, glabrous and acutely tetragonal like the branches; inflorescence-branches 7--15 cm. long, densely many-flowered, slender, glabrous or subglabrous;

flowers not known; fruiting-pedicels 1--2 mm. long, glabrate; fruiting-calyx campanulate, about 3 mm. long and wide, glabrous, its rim irregularly lobed; fruit fleshy, oblong, about 5 mm. long and 4 mm. wide, shiny, glabrous, 2-seeded.

The type of this species was collected by Henry Knute Svenson (no. 11457) -- in whose honor it is named -- on a riverbank at Manglaralto, Guayas, Ecuador, on April 12 or 13, 1941, and is deposited in the Britton Herbarium at the New York Botanical Garden. It is known thus far only from the type.

Citations: ECUADOR: Guayas: Svenson 11457 (N--type).

CITHAREXYLUM TECLENSE Standl., Field Mus. Publ. Bot. 8: 39--40. 1930.

Synonymy: Citharexylum calderonii Standl. ex Moldenke, Prelim. Alph. List Invalid Names 16, in syn. 1940.

Literature: Standl., Field Mus. Publ. Bot. 8: 39--40. 1930; Hill, Ind. Kew. Suppl. 8: 53. 1933; Moldenke, Alph. List Common Names 7. 1939; Moldenke, Geogr. Distrib. Avicenn. 16 & 36. 1939; Moldenke, Prelim. Alph. List Invalid Names 16. 1940; Moldenke, Known Geogr. Distrib. Verbenac., [ed. 1], 21, 71, & 88. 1942; Moldenke, Alph. List Invalid Names 14. 1942; Moldenke, Phytologia 2: 97. 1944; Moldenke, Alph. List Cit. 1: 89 & 321. 1946; H. N. & A. L. Moldenke, Pl. Life 2: 52. 1948; Moldenke, Known Geogr. Distrib. Verbenac., [ed. 2], 38, 158, & 180. 1949; Moldenke, Résumé 45, 215, 255, & 447. 1959.

Tree; branchlets and twigs medium-slender, grayish or brown, sharply tetragonal, densely but minutely puberulent; nodes annulate; principal internodes 1.5--7.5 cm. long; leaf-scars borne on stout closely appressed sterigmata; leaves decussate-opposite; petioles slender, 4--7 mm. long, densely puberulent, sulcate above, margined; leaf-blades firmly chartaceous when mature, membranous when immature, rather dark grayish-green above, lighter beneath, the immature ones brunnescent in drying, broadly elliptic or subobovate, 8--13 cm. long, 2.5--7 cm. wide, broadly rounded or acute at the apex, entire, cuneate at the base, scabrous above, densely short-pubescent with brownish hairs beneath, marked with a few scattered glandular disks beneath and a pair of larger ones on the leaf-prolongation into the petiole; midrib slender, impressed above, prominent beneath; secondaries very slender, 5--12 pairs, arcuate-ascending, subimpressed above, prominulent beneath; vein and veinlet reticulation rather abundant, mostly obscure above or faintly subimpressed, prominulent but often hidden by the pubescence beneath; racemes terminal, nutant, simple, 4--13.5 cm. long, about 2 cm. wide during anthesis, very loosely many-flowered; peduncles and rachis slender, brown, densely puberulent with brown hairs, the former often to 3 cm. long and bearing numerous nodes with white-woolly buds, bracts, and bractlets; bracts often present, foliaceous, varying greatly in size, resembling the upper leaves; bractlets linear, to 7 mm. long, puberulent; prophylla elongate, linear, 2--4 mm. long; calyx campanulate, 5--6 mm. long, about 4 mm. wide,

very minutely puberulent, its rim obsoletely dentate, the teeth very broadly rounded and apiculate at the apex; corolla externally glabrous, its tube broad, 7—8 mm. long, the lobes oblong, 3—3.5 mm. long, thick-textured, rounded or retuse at the apex; fruiting-calyx large, herbaceous, about 7 mm. long and 9 mm. wide, minutely puberulent, not ribbed, its rim shallowly 5-lobed with broad and acute lobes; fruit drupaceous, subglobose, 12—14 mm. long.

The type of this species was collected by Salvador Calderón (no. 2529) at Finca La Joya, near Santa Tecla, La Libertad, El Salvador, on June 4, 1929, and is deposited in the herbarium of the Chicago Natural History Museum. The collector records the vernacular name "café de árbol", and states also that it is cultivated at Puerta de la Laguna. The very scabrous upper leaf-surfaces are characteristic. In all, 7 herbarium specimens, including the types of both names involved, and 5 mounted photographs have been examined.

Citations: EL SALVADOR: La Libertad: Calderón 2529 (B—photo of type, Bm—iso-type, F—592032—type, K—iso-type, K—photo of type, N—iso-type, N—photo of type, S—iso-type, S—photo of type, Z—photo of type). CULTIVATED: El Salvador: Calderón 2354 (F—598812, N).

CITHAREXYLUM TERNATUM Moldenke in Fedde, Repert. 37: 236—237. 1934.

Synonymy: Citarexylum ternatum Moldenke apud Alain in León & Alain, Fl. Cuba 4: 298 & 299. 1957.

Literature: Moldenke in Fedde, Repert. 37: 236—237. 1934; Hill, Ind. Kew. Suppl. 9: 67. 1938; Moldenke, Geogr. Distrib. Avicenn. 5. 1939; Moldenke, Known Geogr. Distrib. Verbenac., [ed. 1], 24 & 88. 1942; Moldenke, Alph. List Cit. 1: 187. 1946; Moldenke, Known Geogr. Distrib. Verbenac., [ed. 2], 43 & 180. 1949; Alain in León & Alain, Fl. Cuba 4: 298 & 299. 1957; Moldenke, Résumé 51, 252, & 447. 1959.

Shrub or tree; branchlets and twigs slender, brown, more or less 5-angled, many-ribbed, obscurely pulverulent or glabrous; nodes annulate, the annular ring ciliate on young twigs; principal internodes 2—5 cm. long; leaf-scars borne on rather stout, short, ascending sterigmata; leaves ternate; petioles slender, 1—1.5 cm. long, glabrous or subglabrate, canaliculate above; leaf-blades firmly chartaceous, dark-green and very shiny above, dull-green beneath, narrowly oblong-elliptic or oblong, 6.5—10.5 cm. long, 2.4—3.1 cm. wide, bluntly acuminate at the apex, entire, acuminate at the base and prolonged into the petioles, bearing a pair of large black glands on the prolongation beneath, glabrous on both surfaces; midrib slender, sharply prominulent in a channel above, prominent beneath; secondaries very slender, 5—9 pairs, arcuate-ascending, usually plainly anastomosing, prominulent on both surfaces; vein and veinlet reticulation fine, prominulent on both surfaces; racemes numerous, ternate, elongate, simple or bifurcate almost at the apex,

7--26 cm. long, 1--1.5 cm. wide, loosely many-flowered, erect or nutant; peduncles and rachis very slender, more or less ribbed, brown or stramineous, glabrous, the former 0.5--4.5 cm. long, often with 1 or 2 nodes bearing buds and bractlets; bractlets few or none, linear, to 5 mm. long; pedicels about 1 mm. long; prophylla setaceous, about 1 mm. long; calyx tubular, slightly zygomorphic, 3.1--3.6 mm. long, about 2.1 mm. wide, 5-costate, glabrous, its rim very shortly 5-dentate and obsoletely ciliate; corolla infundibular, its tube broadly cylindrical, straight, about 3.9 mm. long, uniformly 2.1 mm. wide, externally glabrous, densely tomentose in the throat within, the limb 5-parted, the lobes ovate-lingulate, unequal in size, about 2 mm. long and 1.8 mm. wide, pubescent on the inner surface, rounded at the apex; fertile stamens 4, included, two inserted about 2.6 mm. and the other two about 2.3 mm. below the mouth of the corolla-tube; filaments about 1 mm. long; anthers ovate, about 1 mm. long and 0.5 mm. wide, dorsifixed; staminode small, about 0.3 mm. long; pistil included; style rather thick, about 1.8 mm. long, glabrous; stigma to 0.7 mm. wide, very shortly bilobed; ovary obovate, about 1.5 mm. long and wide, glabrous; fruiting-calyx light, shallowly cupuliform, about 3 mm. long and 5 mm. wide, glabrate, venose-ribbed, its rim subtruncate or erose; immature fruit subglobose, about 5 mm. long and wide, fleshy, wrinkled and 2-sulcate in drying.

The type of this species was collected by Erik Leonard Ekman (no. 14727) in the forest at Loma Vigia, Nagua, Oriente, Cuba, on August 4, 1922, and is deposited in the Britton Herbarium at the New York Botanical Garden. It was originally confused with the related C. tristachyum Turcz. Thus far it is known only from the type specimen. Only it and 5 mounted photographs have been examined.

Citations: CUBA: Oriente: Ekman 14727 (B--photo of type, K--photo of type, N--type, N--photo of type, S--photo of type, Z--photo of type).

CITHAREXYLUM TETRAMERUM T. S. Brandeg., Univ. Calif. Publ. Bot. 3: 390. 1909.

Literature: T. S. Brandeg., Univ. Calif. Publ. Bot. 3: 390. 1909; Prain, Ind. Kew. Suppl. 4: 49. 1913; Moldenke, Geogr. Distrib. Avicenn. 14. 1939; Moldenke, Known Geogr. Distrib. Verbenac., [ed. 1], 16, 80, & 88. 1942; Moldenke, Known Geogr. Distrib. Verbenac. Suppl. 1: 3. 1943; Paray, Bol. Soc. Bot. Mex. 1: 5. 1944; Moldenke, Alph. List Cit. 1: 252, 309, & 310 (1946), 2: 419 & 499 (1948), 3: 834 (1949), and 4: 1038. 1949; Moldenke, Known Geogr. Distrib. Verbenac., [ed. 2], 29 & 180. 1949; Rzedowski, Ciencia 15: 150 & 152. 1955; Rzedowski, Anal. Inst. Biol. Mex. 27: 197 & 199. 1956; Moldenke, Résumé 35 & 447. 1959.

Large shrub; branches and branchlets stout, woody, obtusely tetragonal or sometimes almost subterete, grayish, twiggy, obscurely puberulent or glabrate; twigs slender, gray, densely puberulent, often incanous when very young; nodes not annulate;

principal internodes extremely abbreviated, 1-7 mm. long, on larger branches to 18 mm. long; leaf-scars subsessile, very small; leaves decussate-opposite, extremely numerous and close together; petioles to 1 mm. long or obsolete; leaf-blades firmly chartaceous, uniformly dark-green on both surfaces, oblong-oblan-ceolate, 2-4 cm. long, 4-8 mm. wide, blunt or acute at the apex, entire and usually more or less revolute along the margins, cuneately attenuate at the base, apparently not glanduliferous, glabrous on both surfaces and more or less impressed-punctate (especially beneath); midrib slender, plane or subimpressed above, prominent beneath; secondaries about 8 pairs, mostly obscure or indiscernible, occasionally impressed above; vein and veinlet reticulation indiscernible; racemes abbreviated, axillary, numerous, 1-3-flowered; peduncles 1-3 mm. long, incanous-puberulent, very slender; rachis obsolete; pedicels very slender, 1 mm. long or obsolete; bracts and bractlets none; prophylla linear-setaceous, 1-2 mm. long, incanous-puberulent; calyx cupuliform, about 2.5 mm. long, glabrous, its rim 4-sinuate-dentate; corolla white, 4-5 mm. long, pubescent, pilose in the throat, its limb 4-parted; stamens 4; fruit globose, 3-4 mm. wide.

The type of this very characteristic species was collected by Carl Albert Purpus (no. 2973) on rocky slopes at Cerro de Mazize, Puebla, Mexico, in July, 1907, and is deposited in the University of California herbarium at Berkeley. It is known only from the type locality, from the vicinity of San Luis Tultitlanapa, Puebla, near Oaxaca, and from "San Martín". The last-mentioned locality could be in Chiapas, Chihuahua, Coahuila, Durango, Guerrero, Hidalgo, Jalisco, México, Michoacán, Nuevo León, San Luis Potosí, Vera Cruz, or Zacatecas, as there is a San Martín in each of these states. However, my good friend and colleague, Dr. Maximo Martínez, in a letter to me dated May 5, 1945, tells me that there is a San Martín Texmelucan in the state of Puebla, so I am assuming that this is the locality where Hahn collected his material of the species.

Ladislao Paray, in the reference listed above, records the species from 50 km. northeast of Ixmiquilpan, in the state of Hidalgo, but I have as yet seen no material of it from that state. He says: "La vegetación arbórea se caracteriza por al anacahuite (Cordia boissieri). Abundan Morkellia mexicana (=Manto de coyote). Cera de los manantiales crecen los Citharexylum tetramerum de la familia de las Verbenáceas, la Chiococca alba y la Vallesia glabra."

The species was recorded by me in 1939 and 1942 as from the state of Oaxaca, but this was due to a faulty reading of a herbarium label, and the record was deleted in the 1942 edition of my work on the geographic distribution of the members of the group. The species has been collected in anthesis in July. In all, 18 herbarium specimens, including the type, and 9 mounted photographs have been examined.

Citations: MEXICO: Puebla: Hahn s.n. [S. Martín, 3 about 1865]

(N, P, P); Purpus 2973 [July 1907] (B--isotype, Ca--112960--type, E--photo of type, F--224008--isotype, K--photo of isotype, N--isotype, N--photo of type, N--photo of isotype, S--photo of type, S--photo of isotype, W--photo of type, Z--photo of type, Z--photo of isotype), 2973 [July 1908] (B, Bm, Ca--139931, Cb, E--119065, Ed, F--243782, G, N, P, W--840717).

CITHAREXYLUM TRISTACHYUM Turcz., Bull. Soc. Imp. Nat. Mosc. 36 (3): 209--210. 1863.

Synonymy: Citharexylum urbanii O. E. Schulz in Fedde, Repert. 5: 193--194. 1908. Citharexylum tetrastachyum Urb. ex Roig, Est. Exp. Agron. Santiago Vegas Bol. 54: 340. 1928. Citharexylum tristachyon Turcz. ex Roig, Est. Exp. Agron. Santiago Vegas Bol. 54: 794. 1928. Citharexylum tetrastichum Urb. ex Moldenke, Prelim. Alph. List Invalid Names 18, in syn. 1940. Citharexylum tetrastachyum Urb. ex Roig, Dicc. Bot. 2: 1003. 1953. Citharexylum tristachyon Britton & Wilson ex Roig, Dicc. Bot. 1: 608. 1952. Citharexylum tristachyum Turcz. ex Alain in León & Alain, Fl. Cuba 4: 301. 1957. Citharexylum urbanii O. E. Schulz ex Alain in León & Alain, Fl. Cuba 4: 301, in syn. 1957. Citharexylum urbani O. E. Schulz ex Moldenke, Résumé 259, in syn. 1959.

Literature: Turcz., Bull. Soc. Imp. Nat. Mosc. 36 (3): 209--210. 1863; Jacks., Ind. Kew. 1: 550. 1893; O. E. Schulz in Fedde, Repert. 5: 193--194. 1908; O. E. Schulz in Urb., Symb. Antill. 6: 66--67. 1909; Prain, Ind. Kew. Suppl. 4: 49. 1913; Roig, Est. Exp. Agron. Santiago Vegas Bol. 54: 340, 793, & 794. 1928; Grey & Hubbard, List Fl. Atkins Instit, 56. 1933; Moldenke, Alph. List Common Names 14, 18, 21, & 26. 1939; Moldenke, Geogr. Distrib. Avicenn. 5, 6, 8, & 36. 1939; Moldenke, Prelim. Alph. List Invalid Names 18. 1940; Moldenke, Suppl. List Common Names 1 & 16. 1940; Moldenke, Alph. List Invalid Names 15. 1942; Moldenke, Known Geogr. Distrib. Verbenac., [ed. 1], 24, 25, 27, 71, & 88. 1942; Moldenke, Phytologia 2: 97. 1944; Moldenke, Alph. List Cit. 1: 60, 75, 79, 135, 136, 179, 184, 185, 199, 258, 261, 273, 303, 306, & 314 (1946) and 2: 332, 335, 358, 419, 435, 486, 487, 524, 528, 543, 550, 558, 569, 578, 579, & 646--651. 1948; H. N. & A. L. Moldenke, Pl. Life 2: 87. 1948; Moldenke, Known Geogr. Distrib. Verbenac., [ed. 2], 43, 46, 50, 158, & 180. 1949; Moldenke, Alph. List Cit. 3: 664, 713, 720, 779, 809, 833, 889, 929, & 930 (1949) and 4: 1017, 1018, 1057, 1065, 1080, 1103, 1143, 1206, 1255, & 1289. 1949; Moldenke, Phytologia 3: 465. 1951; Alain in León & Alain, Fl. Cuba 4: 299 & 301. 1957; Moldenke, Résumé 51, 55, 59, 215, 252, 258, 259, & 447. 1959.

Varying from large bush or small shrub to tree, to 7 m. tall; branchlets slender, stramineous, lenticellate, obtusely tetragonal, glabrous; twigs slender, brown, often acutely tetragonal and many-ribbed, glabrous and shiny or more or less puberulent at the apex; nodes obscurely annulate; principal internodes 1--5 cm. long; leaf-scars borne on short, slender, corky, rather obscure

sterigmata; leaves decussate-opposite; petioles very slender, 7--22 mm. long, minutely puberulent or pulverulent to glabrous, canaliculate above; leaf-blades chartaceous, rather uniformly dark-green on both surfaces, often rather shiny above, broadly lanceolate or ovate, 4--15 cm. long, 1.8--3.9 cm. wide, sometimes slightly falcate at the apex, acuminate at the apex, entire, broadly acute or cuneate at the base, glabrate above (or puberulent-pubescent when immature), densely puberulent or short-pubescent beneath (especially on younger leaves and along the midrib) or merely pulverulent to glabrous, usually not glanduliferous but sometimes bearing 1 or 2 black glands on a prolongation into the petiole beneath; midrib slender, often subimpressed above, prominent beneath; secondaries slender, rather few and distant, 3--5 pairs, arcuate-ascending, usually prominent on both surfaces; vein and veinlet reticulation fine, often obscure on both surfaces, especially above; racemes axillary and terminal, mostly compound, sometimes simple, most often with a pair of lateral branches much shorter than the central one, 3.5--15 cm. long, each branch usually about 1 cm. wide during anthesis, 1--1.5 cm. wide in fruit, rather densely many-flowered, numerous, mostly erect; peduncles and rachis very slender, glabrous or subglabrate, the former 1--1.5 cm. long, often nodose; pedicels filiform, 1--1.5 mm. long, glabrate; bracts (when present) foliaceous and similar to the leaves but smaller, few; bractlets linear, 1--2 cm. long; prophylla linear, 1--1.5 mm. long; flowers erectopate; calyx obconic or infundibular, about 2.5 mm. long, externally tomentulose or glabrous, its rim truncate, plainly 5-dentate or 5-repand-dentate, ciliate; corolla subhypocrateriform or subcampanulate, yellow or yellowish to yellowish-green or pale yellowish-green, sometimes white, externally glabrous, villos in the throat within, its lobes suborbicular or broadly oblong, $1/3$ to $1/5$ the length of the entire corolla; stamens 4; filaments 0.5 mm. long; anthers 0.5--1 mm. long; staminode very rudimentary; pistil 2.5--3 mm. long; style 1--1.5 mm. long, merging at the base into the ovary; stigma bilobed, conspicuously wider than the style; ovary obovate or ellipsoid; fruiting-pedicels about 1.5 mm. long; fruiting-calyx light, cupuliform, about 2.5 mm. long and 4 mm. wide, pulverulent or very lightly puberulent, its rim broadly 5-angulate or subtruncate; fruit drupaceous, subglobose or obovate, 3--7.5 mm. long, to 5 mm. wide, fleshy, black and wrinkled in drying, obtuse at the apex, glabrous and very shiny; pyrenes bilocular.

The type of this species was collected by Jean Jules Linden (no. 2173) near Nimanima, "prov. Santiago", Oriente, Cuba, at an altitude of 2000 feet. The type of *C. urbanii* was collected by William Harris (no. 6724) in Green Valley, Jamaica, on October 9, 1896, and is deposited in the herbarium of the Botanisches Museum at Berlin. This latter type collection has the lower leaf surfaces densely short-pubescent, especially along the midrib. A similar condition is seen in *McFadyen s.n.*, *Ekman 7859*, and *Or-*

cutt 3144. The Ekman collection was identified by Schulz himself as C. tristachyum and the Orcutt number as C. berterii Spreng. [= C. caudatum L.]. León & Roca 7837 prove the conspecificity of C. urbanii and C. tristachyum -- the younger leaves toward the apex of the twigs, although almost the same size as the lower leaves, are densely short-pubescent beneath and puberulent above, while the lower leaves are perfectly glabrous on both surfaces. Hart 640 exhibits much the same condition, although here the pubescence is confined to the lower surface on the younger (upper) leaves.

The species has been found on limestone hills and hillsides, in valleys, thickets, pastures, and road cuts, at the foot of cliffs, and in coastal thickets. It has been collected in anthesis in January, April, May, and from July to October, and in fruit in January and from July to September, at altitudes of sea-level to 950 meters. It has been confused in herbaria with C. berterii, C. caudatum, C. longiflorum Turcz., and even with Gonzalagunia brachyantha (Rich.) Urb. in the Rubiaceae. Curbelo reports that its wood is employed in Cuba. Clément 278 exhibits one branch with ternate leaves. Common names recorded for the species are "agracejo", "guayo blanco", "guayo roble", "la calerio", "maíz de la Indias", "mari de las Indias", "mavi de las Indias", "palo blanco", and "roble guayo". The name "agracejo" is probably recorded for this plant erroneously, as it is a name applied commonly in Colombia to members of this genus, notably to C. dawei Moldenke, C. karsteni var. lancoelatum Moldenke, and C. fruticosum L.; "palo blanco" is probably also recorded here in error -- it applies to C. karsteni var. lancoelatum, C. tomentosum H.B.K., and Rehdera penninervia Standl. & Moldenke.

The Eggers 5453 collection cited below may have been collected in Las Villas instead of in Oriente -- its label merely reads "Caimanera".

The species is cultivated at Santa Clara, Cuba, according to Grey & Hubbard in their work listed above; it was collected in cultivation by J. G. Jack in the Havana Botanic Garden and also by him at Limones, Cuba, in 1929. It is cultivated also at the Coconut Grove, Florida, Plant Introduction Garden, the seeds having been presented by Robert M. Grey through F. G. Walsingham from Soledad, Cuba. In all, 162 herbarium specimens, including the types of all the names involved, and 17 mounted photographs have been examined.

Citations: CUBA: Camagüey: Acuña 13782 (Es), s.n. [Herb. Roig 3787] (Es), s.n. [Herb. Roig 8812] (Es). Las Villas: Alain 6375 (Ok); Cuesta 212 (N); Hodge, Howard, & Godfrey 4463 (G), 4704 (G); R. A. Howard 5650 (N, N, Um-48511); Jack 7462 (B, F--719811, L, N, W-1478091), 7470 (A, N), 7477 (A, B, F--720147, N, S, W-1478243), 7478 (A, B, F--720148, S, W-1478247); León

4107 [Herb. Roig 5784] (Es), 7337 (Ha, N), 13954 (Um--99), 14031 (Ha, N); León & Clément 5437 (Ha, N), 6683 (Ha, N); León & José 4107 (Ha, N); León & Roca 7837 (N); Shafer 12086 (N, N); Walsingham s.n. [Nov. 15, 1934] (N). Oriente: Acuña 17170 (Es); Acuña & Diaz Barreto 17441 (Es, N); Alain & Chrysogone A.1075 (N); Alain & Morton 5038 (Ss); Bucher 40 [Herb. Roig 4937] (Es); Clément 278 (Ha), 2849 (Ha, N), 2851 (Ha, N); Curbelo 539 [Herb. Roig 5286] (Es); Eggers 5453 (A, B, B, K, Lu--1699, P, Vu, W--1323227); Ekman 1509 (N--photo, S, Z--photo), 3301 (N, S), 4874 (S), 7378 (B, N, S), 7538 (B, S), 7859 (B, S), 8019 (B, S), 8734 (B, S); Hioram 1574 (Ha, N, Se--14920), 4196 (Ha, N, N), s.n. [Finca San Francisco] (Ha); Hioram & Btiste 1574 (N); León 3914 (Ha, N), 11856 (Ha), 12234 (Ha, N), 12235 [Herb. Roig 5876] (Es, Ha), 14748 (Ha), 17714 (Ha); León & Alain 18915 (Ha, N); León & Victoran 18686 (Ha, N); Linden 2173 (B--photo of isotype, Cb--isotype, K--photo of isotype, N--photo of isotype, P--isotype, S--photo of isotype, Z--photo of isotype); López Figueiras 1039 (Z); Shafer 7937 (N); C. Wright 437 [1856--7] (Br, Cb, Cb, D--611744, E--119069, F--686765, G, K, N, Os, X), 1356 [Jan.--Jul. 1859] (G, K), 1356 [1860] (B, B, Cb, D--610678, E--119070, Os, P, X). Province undetermined: Sagra s.n. (P). JAMAICA: N. L. Britton 48 (N); W. Harris 6724 (B, B, B--photo, E--photo, F--145894, F--185311, K--photo, N, N, N--photo, N--photo, S--photo, S--photo, W--photo, Z--photo, Z--photo); Hart 640 (F--393694, N, N, W--1323184); Herb. W. Hooker s.n. (P); Hooker s.n. [1843] (K); Masson s.n. (Bm); Mc Fadyen s.n. (K, K, Le); Orcutt 3144 (W--1478330), 3511 (W--1478358); J. E. Perkins 1193 (K); Purdie s.n. [Port Royal Mountains] (K); Yuncker 18324 (S). VIRGIN ISLANDS: St. Thomas: Herb. Ventenat s.n. (Cb). CULTIVATED: Cuba: Jack 8265 (A, Ba, W--1555887). Florida: Fennell 1030 [U. S. Plant Introd. 90904] (Oa--14099), s.n. [Coconut Grove Introd. Gard.; U. S. Plant Introd. 101245] (Ar--3264); Fennell & Jones 790 (Ar--17155). Java: Herb. Mus. Hort. Bot. Bogor. XI.G.18 (Bz--25785, Bz, Bz, Bz, N).

CITHAREXYLUM ULEI Moldenke in Fedde, Repert. 37: 237. 1934.

Literature: Moldenke in Fedde, Repert. 37: 237. 1934; Moldenke, Geogr. Distrib. Avicenn. 26. 1939; Moldenke, Known Geogr. Distrib. Verbenac., [ed. 1], 36 & 88. 1942; Moldenke, Alph. List Cit. 1: 167 (1946) and 2: 337, 343, & 622. 1948; H. N. & A. L. Moldenke, Pl. Life 2: 87. 1948; Moldenke, Known Geogr. Distrib. Verbenac., [ed. 2], 59, 76, & 180. 1949; Moldenke, Phytologia 3: 133 & 134. 1949; Moldenke, Alph. List Cit. 3: 694 (1949) and 4: 1014 & 1015. 1949; R. E. Schultes, Bot. Mus. Leaflets Harvard 16 (4): 90. 1953; Moldenke, Résumé 66, 88, & 447. 1959.

Small tree, to 15 m. tall; branches very stout and robust, stramineous, subterete, conspicuously lenticellate with very num-

erous small lenticels, hollow, glabrous; twigs more slender, brown, hollow, lenticellate, obtusely tetragonal, glabrate; nodes conspicuously annulate; principal internodes 3--4.5 cm. long; leaf-scars borne on rather stout, prominent and ascending sterigmata; leaves ternate throughout; petioles stout, 1.5--2.5 cm. long, glabrous, canaliculate above, ampliate at the base; leaf-blades very firmly chartaceous, oblong or elliptic, 13.5--20 cm. long, 4.1--7.5 cm. wide, blunt or acute at the apex, entire, broadly rounded or acute at the base and prolonged 5--7 mm. into the petiole, bearing a pair of very large crateriform glands on this prolongation, very minutely and obscurely puberulent-roughened or glabrate above, very minutely puberulent beneath and hirtellous along the larger venation; midrib stout, sharply prominent above, very prominent beneath; secondaries slender, 8--10 pairs, arcuate-ascending, plane or very slightly prominent above, decidedly prominent beneath; vein and veinlet reticulation very abundant, not very prominent; racemes axillary and terminal, simple and ternate when axillary, compound and thyrsoïd when terminal, the simple ones 5--37 cm. long, about 1.5 cm. wide during anthesis, rather densely many-flowered, erect or nutant, the terminal ones with 1--3 whorls of branches; peduncle and rachis very slender, minutely puberulent, the former 1--3 cm. long, not nodose; pedicels obsolete or to 1 mm. long; bracts absent; bractlets linear, in the terminal inflorescence only and there subtending the branches, 5--7 mm. long, canescent-puberulent; prophylla minute, setaceous, often almost indiscernible; calyx tubular, light, about 2.8 mm. long and 1.6 mm. wide, minutely pulverulent, not costate, the rim truncate and subentire; corolla white, hypocrateriform, its tube almost straight, about 6.2 mm. long, about 0.8 mm. wide at the base, widened to 1.8 mm. at the apex, externally glabrous, densely short-pilose in the throat within, the limb 5-parted, the lobes elongate-oblong, about 2.8 mm. long and 1.3 mm. wide, obtuse at the apex; stamens 5, didynamous, equaling the corolla-tube, two inserted about 1.3 mm. and the other three about 1.5 mm. below the mouth of the corolla-tube; filaments about 1 mm. long; anthers about 1.3 mm. long and 0.5 mm. wide; pistil included; style rather thick, about 2.3 mm. long, glabrous; stigma about 0.6 mm. wide, very shortly bilobed; ovary obovate, about 0.8 mm. long and wide, glabrous; fruiting-calyx indurated, shallowly cupuliform, about 2.5 mm. long and 5 mm. wide, obscurely puberulent or glabrate, its rim irregularly erose; fruit oblong, about 7 mm. long and 5 mm. wide, red, not very fleshy, brown and 2-sulcate in drying, dull, glabrous.

The type of this species was collected by Ernst Heinrich Georg Ule (no. 9724) on the riverbank at Seringal São Francisco on the Rio Acre, Amazonas, Brazil, in April, 1911, and is deposited in the herbarium of the Royal Botanic Gardens at Kew. The collector describes it as a tree 5--15 m. tall. It has been collected in flower in April, and in fruit in May. A common name for it is "cauchillo". Schultes states that the species occurs

"right up to the base of the Andes in Colombia". It was listed in error from Matto Grosso by me in my 1939 publication cited above. It has also been collected at Cachoeira on the Rio Jurua. It is obviously closely related to C. amazonicum Moldenke and C. subtruncatum Moldenke. It has been confused in herbaria with C. cinereum L. and C. poeppigii Walp. In all, 18 herbarium specimens, including the type, and 7 mounted photographs have been examined.

Citations: COLOMBIA: Putumayo: R. E. Schultes 3388 (N). BRAZIL: Amazonas: Ducke 470 (F--901838, S, N, W--1693474); Krukoff 4600 (N, N); Ule 5501 [Macbride photos 28399] (B, Cb, F--830252--photo, K, Kr--photo, Le, N, N, N--photo), 9724 (B--isotype, B--photo of type, Cb--isotype, Cb--isotype, K--type, Le--isotype, N--photo of type, S--photo of type, Z--photo of type).

CITHAREXYLUM ULEI var. CALVESCENS Moldenke, *Phytologia* 2: 363--364. 1947.

Literature: Moldenke, *Phytologia* 2: 363--364. 1947; Moldenke, *Alph. List Cit.* 4: 1294. 1949; Moldenke, *Known Geogr. Distrib. Verbenac.*, [ed. 2], 76 & 180. 1949; Moldenke, *Résumé* 88 & 447. 1959.

This variety differs from the typical form of the species in not having its leaf-blades hirtellous along the larger venation beneath.

The type of the variety was collected by Ricardo de Lemos Fróes (no. 1719) near the river, Candido Mendes, in the Maracasumé River region, Maranhão, Brazil, on May 2, 1932, and is deposited in the Britton Herbarium at the New York Botanical Garden. The collector describes it as a tree 20 feet tall, with whitish flowers, and records the vernacular name of "tarumá branco" -- a name also recorded for C. laetum Hiern, with which I at first confused the plant. Only 3 herbarium specimens have been examined.

Citations: BRAZIL: Maranhão: Fróes 1719 (La--isotype, N--type, S--isotype).

CITHAREXYLUM VALLENSE Moldenke, *Phytologia* 2: 15--16. 1941.

Literature: Moldenke, *Phytologia* 2: 15--16. 1941; Moldenke, *Known Geogr. Distrib. Verbenac.*, [ed. 1], 31 & 88. 1942; Moldenke, *Alph. List Cit.* 2: 610 (1948) and 4: 1074. 1949; Moldenke, *Known Geogr. Distrib. Verbenac.*, [ed. 2], 59 & 180. 1949; E. J. Salisb., *Ind. Kew. Suppl.* 11: 55. 1953; Moldenke, *Résumé* 66 & 447. 1959.

Tree, to 8 m. tall; branchlets very coarse and heavy, sharply tetragonal, decussately flattened and ampliate at the nodes, margined, densely pulverulent-farinose when young, glabrescent in age; nodes plainly annulate with a circumferential ridge; principal internodes 3--6 cm. long (at the tips of the branchlets); leaves decussate-opposite; petioles heavy, about 5 cm. long, pulverulent-farinose, glabrescent in age; leaf-blades

coriaceous, dark-green above, lighter beneath, ovate, about 30 cm. long, 10--12 cm. wide, acute or short-acuminate at the apex, entire, acute at the base and there bearing 2 large black glands parallel to the midrib, very sparsely pulverulent along the midrib and larger veins on both surfaces, glabrescent in age; midrib heavy, flat or subimpressed above, very prominent beneath; secondaries slender, about 15 per side, flat above, sharply prominent beneath, arcuate-ascending, conspicuously joined in many loops near the margins; veinlet reticulation obscure or indiscernible above, prominulous beneath; inflorescence spicate, axillary, 8--15 cm. long, densely many-flowered; peduncles (1--2 cm. long) and rachis very stout, very densely furfuraceous with sordid grayish or buff-colored furf, less densely so in age; pedicels obsolete; prophylla tiny, scale-like, 1--1.5 mm. long, densely furfuraceous farinose; calyx tubular, coriaceous, heavy, 6--8 mm. long, 4--5 mm. wide, densely furfuraceous-farinose with sordid grayish or buff-colored furf; corolla white, barely protruding from the calyx, its limb 5-parted, the lobes elliptic-lingulate, about 3 mm. long, densely pilose at the base.

The type of this species was collected by Ellsworth Paine Killip and Hernando García y Barriga (no. 33940) in a dense forest at San Antonio, west of Cali, near the summit of the Cordillera Occidental, at an altitude of 1900--2350 meters, between February 26 and March 2, 1939, and is deposited in the Britton Herbarium at the New York Botanical Garden. The collectors note that it is a tree 7--8 m. tall. It has been confused in the past with the closely related C. montanum Moldenke. Only two specimens have been examined.

Citations: COLOMBIA: Valle del Cauca: Killip & García 33940 (N--type, W--1770798--isotype).

CITHAREXYLUM VENEZUELENSE Moldenke in Fedde, Repert. 37: 237--238. 1934.

Literature: Moldenke in Fedde, Repert. 37: 237--238. 1934; Hill, Ind. Kew. Suppl. 9: 67. 1938; Moldenke, Geogr. Distrib. Avicenn. 20. 1939; Moldenke, Known Geogr. Distrib. Verbenac., [ed. 1], 32 & 88. 1942; Moldenke, Alph. List Cit. 1: 198. 1946; Moldenke, Known Geogr. Distrib. Verbenac., [ed. 2], 62 & 180. 1949; Moldenke, Résumé 70 & 447. 1959.

Shrub or tree, to 4 m. tall; branches tetragonal; branchlets and twigs rather slender, light-gray, rather acutely tetragonal, glabrous; nodes obscurely annulate; principal internodes 1--4.4 cm. long; leaf-scars borne on very large, extremely prominent, ascending or subdivergent, corky sterigmata to 5.5 mm. long; leaves decussate-opposite; petioles rather stoutish, 5--7 mm. long, glabrate, sometimes glanduliferous; leaf-blades chartaceous, dark-green, mostly darker beneath, subnitid above, oblong, 10--12.5 cm. long, 3.9--4.4 cm. wide, acute or very shortly and abruptly acuminate at the apex, entire, acute or subacuminate at the base, usually bearing a pair of glands at the very base or on the apex of the petiole, glabrous above, densely short-

pubescent beneath; midrib slender, prominent beneath; secondaries slender, 5--7 pairs, ascending at an angle of 45° , not much arcuate except toward the margin, subimpressed or plane above, prominent beneath; vein and veinlet reticulation rather abundant, slightly prominent on both surfaces; inflorescence and flowers not known; fruiting-calyx very much incrassate and indurated, shallowly cupuliform, about 4 mm. long and 7 mm. wide, glabrous or minutely puberulous on the rim, its rim irregularly erose; fruit large, oblong, about 17 mm. long and 10 mm. wide, fleshy, glabrous, dull, brown in drying.

The type of this little-known species was collected by August Fendler (no. 1298) between Caracas and La Guayra, Federal District, Venezuela, at an altitude of about 1000 feet, on August 16, 1855, and is deposited in the Gray Herbarium of Harvard University. The fruiting-calyx is like that of *C. solanaceum* Cham., and the fruit has been collected in August and October. The printed labels accompanying the type collection bear the words "Prope coloniam Tovar", and this is the basis for my previous accrediting this species to the state of Aragua, apparently erroneously. In all, only 2 herbarium specimens, including the type, and 5 mounted photographs have been examined.

Citations: VENEZUELA: Federal District: Fendler 1298 (B--photo of type, G--type, K--photo of type, N--photo of type, S--photo of type, Z--photo of type). State undetermined: Lasser 2104 (Ve).

CITHAREXYLUM VIRIDE Moldenke in Fedde, Repert. 37: 238--239. 1934.

Literature: Moldenke in Fedde, Repert. 37: 238--239. 1934; Hill, Ind. Kew. Suppl. 9: 67. 1938; Standl., Field Mus. Publ. Bot. 18: 1002. 1938; Moldenke, Alph. List Common Names 9. 1939; Moldenke, Geogr. Distrib. Avicenn. 17. 1939; Moldenke, Known Geogr. Distrib. Verbenac., [ed. 1], 22, 23, & 88. 1942; Moldenke, Phytologia 2: 97. 1944; Moldenke, Alph. List Cit. 1: 58, 123, & 319 (1946), 2: 340, 349, & 431 (1948), 3: 757 (1949), and 4: 1055, 1098, & 1120. 1949; Moldenke, Known Geogr. Distrib. Verbenac., [ed. 2], 39, 40, & 180. 1949; Moldenke, Phytologia 4: 68. 1952; Moldenke, Résumé 46, 48, & 447. 1959.

Shrub, 2.5--3 m. tall, or tree, to 7 m. tall; trunk to 10 cm. in diameter; branchlets and twigs slender, acutely tetragonal, light-brown, more or less ribbed, puberulent at the apex, becoming merely pulverulent or glabrate; nodes annulate; principal internodes 1.8--7.5 cm. long; leaf-scars borne on slender ascending or closely appressed sterigmata to 4 mm. long; leaves decussate-opposite or subopposite; petioles slender or stoutish, 6--12 mm. long, glabrate, deeply sulcate above; leaf-blades chartaceous, rather uniformly bright-green on both surfaces, oblong-elliptic or rarely subobovate, 7--13 cm. long, 2.8--5.8 cm. wide, acute or acuminate at the apex, entire, acute at the base, obscurely puberulent above, becoming subglabrate, densely

puberulent beneath, often distichously pubescent along the midrib, bearing 1 or 2 pairs of elongate brown glands at the base beneath parallel with the midrib; midrib slender, decidedly and sharply prominulent above, prominent beneath; secondaries slender, 5 or 6 pairs, ascending at an angle of about 45° , often not very arcuate, prominulent on both surfaces; vein and veinlet reticulation abundant, prominulent on both surfaces; racemes axillary and terminal, 3--14 cm. long, erect or nutant, simple or the terminal ones compound with 1--7 long branches, each simple raceme about 1.5 cm. wide in fruit, rather densely many-flowered; peduncles and rachis slender or stoutish, brownish, densely puberulent, the former 1--4 cm. long, often nodose; fruiting pedicels of 2 kinds, some very short and stout, about 1 mm. long, others among them very slender, elongate to 9 mm., and often genuiflexuous at the apex, puberulent, the latter type often not present; bracts foliaceous, similar to the leaves, but smaller; bractlets linear, 4--8 mm. long; prophylla linear, 2--4 mm. long; flowers not known; fruiting-calyx indurated, cupuliform, about 3.5 mm. long and 5 mm. wide, minutely puberulent or glabrate, usually borne on a corky receptacle, its rim broadly 5-lobed with triangular lobes or merely erose; fruit drupaceous, oblong, about 7 mm. long and 6 mm. wide, slightly fleshy, glabrous, rather shiny, bright-orange when fresh, wrinkled and brown or blackish and 2-sulcate in drying.

The type of this species was collected by George Proctor Cooper III and George Mackay Slater (no. 157) at Progreso, Chiriquí, Panama, in July or August, 1927, and is deposited in the Britton Herbarium at the New York Botanical Garden. It has hitherto been confused with the related C. cooperi Standl., from which it may at once be distinguished by its prominulous venation on the upper leaf-surface. Common names recorded for it are "corrimiente" and "corrimiento", the former also listed for C. cooperi. It has also been confused by herbarium workers with C. recurvatum Greenm. The species has been collected in fruit in January and August, and has been found at an altitude of 1300 meters. In all, 14 herbarium specimens, including the type, and 5 mounted photographs have been examined.

Citations: COSTA RICA: Cartago: J. León 1370 [Herb. Inst. Interamer. Turrialba 367; M.18] (W--2021436). Puntarenas: Brenes 12332 [211; 811] (F--856038). PANAMA: Chiriquí: Cooper & Slater 157 (A--isotype, B--photo of type, F--573060--isotype, G--isotype, K--photo of type, N--type, N--photo of type, S--photo of type, W--1318374--isotype, Y--10510--isotype, Z--photo of type), 201 (F--573120, N, W--1318410, Y--10554); Wagner 580 (Mu--755); Peggy White 223 (F--1005201).

CITHAREXYLUM WEBERBAUERI Hayek in Engl., Bot. Jahrb. 42: 169 (as "Citharexylon"). 1908; Prain, Ind. Kew. Suppl. 4: 49. 1913.

Literature: Hayek in Engl., Bot. Jahrb. 42: 169. 1908; Prain, Ind. Kew. Suppl. 4: 49. 1913; Moldenke, Geogr. Distrib. Avicenn.

23. 1939; Moldenke, Prelim. Alph. List Invalid Names 16. 1940; Moldenke, Known Geogr. Distrib. Verbenac., [ed. 1], 34 & 88. 1942; Moldenke, Alph. List Invalid Names 13. 1942; H. N. & A. L. Moldenke, Pl. Life 2: 88. 1948; Moldenke, Alph. List Cit. 2: 328 (1948), 3: 691 (1949), and 4: 1112. 1949; Moldenke, Known Geogr. Distrib. Verbenac., [ed. 2], 72 & 180. 1949; Moldenke, Résumé 82, 255, & 447. 1959.

Shrub, about 1 m. tall; branches and branchlets strong and stiff, obtusely tetragonal or almost subterete, spinose, twiggy, glabrous or subglabrate; twigs greatly abbreviated, mostly covered by almost overlapping leaf-sterigmata, densely short-pubescent with dark-brownish hairs; spines to 16 mm. long, mostly simple, occasionally branched near the summit, sharp, stiff; nodes annulate, usually not clearly discernible except on young vigorous shoots; principal internodes on the branches and branchlets to 1.5 cm. long, on the twigs about 1 mm. long; leaves decussate-opposite, mostly crowded at the apex of the twigs; petioles very slender, 1--3 mm. long, densely short-pubescent; leaf-blades thin-chartaceous, dark-green, brunnescient or nigrescent in drying, oblong or oblong-elliptic to obovate, 7--17 mm. long, 3.5--10 mm. wide, rounded or obtuse at the apex, entire, acute and narrowed into the petiole at the base, apparently not glanduliferous, densely or sparsely puberulent or pilose above, becoming glabrescent, densely short-pubescent or velutinous with dark-brown hairs beneath; midrib very slender, obscure or subimpressed above, slightly prominulent beneath; secondaries several, mostly obscure; vein and veinlet reticulation mostly obscure; racemes abbreviated, to 1 cm. long, axillary and terminal, 3--6-flowered, subnutant; peduncle and rachis very slender, much abbreviated, densely short-pubescent or velutinous, the former 1--3 mm. long; pedicels very slender, 1--3 mm. long, densely short-pubescent; bracts and bractlets absent; prophylla absent or very minute; calyx campanulate, 4--5 mm. long, subvelutinous, its rim subtruncate, shortly 4-dentate; corolla yellowish-white, slightly surpassing the calyx, puberulent inside; fruiting-calyx and fruit not known.

The type of this species was collected by August Weberbauer (no. 3731) -- in whose honor it is named -- in the valley of the Río Marañon between Chuquibamba and Punchau, at an altitude of 2750 meters, Huamelies, Huanuco, Peru, on October 23, 1903, and is deposited in the herbarium of the Botanisches Museum at Berlin. The type locality is described as an open region covered with a mixed growth of shrubs, herbs, and grasses. The species is obviously related to *C. flexuosum* (Ruiz & Pav.) D. Don, but is said to differ from it by its rounded leaves, fewer-flowered racemes, and smaller flowers. In all, only 2 specimens and 7 mounted photographs have been examined.

Citations: PERU: Huanuco: Weberbauer 3731 [Macbride photos 17603] (B--type, F--663032--photo of type, K--photo of type, Kr--photo of type, N--isotype, N--photo of type, N--photo of type, S--photo of type, Z--photo of type). MOUNTED CLIPPINGS:

Engl., Bot. Jahrb. 42: 169. 1908 (B).

ADDITIONAL NOTES ON THE GENUS CITHAREXYLUM. I

Harold N. Moldenke

The following notes are supplementary to those published by me in my work entitled "Materials toward a monograph of the genus Citharexylum" in *Phytologia* 6: 242--256, 262--320, 332--368, & 383--432 (1958), 6: 448--505 (1959), and 7: 7--48 & 49--73. 1959.

CITHAREXYLUM B. Juss.

Additional synonymy: Citharaexylum Lavoie, in herb.

Additional literature: Veloso & Klein, *Sellowia* 8: 182 & 220. 1957; *Biol. Abstr.* 30: 3860 & 4395. 1958; Menninger, 1959 Price List [7]. 1958; Valdés Gutiérrez, *Bol. Soc. Bot. Mex.* 23: 114 & 129. 1958; Lombardo, *Arb. Cult. Pas. Pub.* 99--100 & 276. 1958; Moldenke, *Résumé* 12, 27, 34, 35, 40, 41, 43--51, 53--66, 70, 75, 76, 78, 79, 82, 87, 88, 113, 116, 118, 123, 129, 140, 165, 185, 203, 214, 215, 226, 234--237, 240, 252--259, 268, 276, 277, 282--284, 294, 297, 301, 302, 309, 313, 314, 319, 320, 330, 342, 343, 355, 391, 397, 398, 408, 415, 416, 418, 419, 422--424, 446, & 447. 1959; Moldenke, *Résumé Suppl.* 1: 2--5, 14, 16, 18, & 25. 1959.

CITHAREXYLUM AFFINE D. Don

Additional literature: Moldenke, *Phytologia* 6: 277--282. 1958; Moldenke, *Résumé* 34, 214, 255, 256, 258, 277, & 446. 1959.

Additional citations: MEXICO: México: G. L. Fisher s.n. [Ame-
cameca, July 24, 1924] (V1).

CITHAREXYLUM ANDINUM Moldenke

Additional literature: Moldenke, *Phytologia* 6: 262 & 288--289. 1958; Moldenke, *Résumé* 82, 113, & 446. 1959.

Additional citations: BOLIVIA: Cochabamba: Troll 978 (B).

CITHAREXYLUM BERLANDIERI B. L. Robinson

Additional literature: Moldenke, *Phytologia* 6: 265 & 290--294. 1958; Moldenke, *Résumé* 27, 34, 214, 253, 259, & 446. 1959.

The Pringle 3734 collection appears to be a topotype collection.

Additional citations: MEXICO: San Luis Potosí: Pringle 3734 (Mm--15343).

CITHAREXYLUM BRACHYANTHUM (A. Gray) A. Gray

Additional synonymy: Citharexylum brachyantum Gray ex Valdés